What is Claimed is:

1. A method of controlling the thickness profile in the production of blown film in blown film extruders having a blow head, a main cooling ring and an additional cooling ring arranged outside the main cooling ring, comprising:

supplying separate additional air streams from said additional ring measuring the film thickness of the blown film with a measuring and controlling device above a freezing zone in different circumferential regions;

controlling the additional air streams as a function of the measured film thicknesses; and

supplying the additional air streams in the direction of production in front of the main cooling ring.

2. A method according to Claim 1, further comprising directly directing the additional air streams against the film tube emerging from the blow head.

3. A method according to Claim 1, further comprising controlling the volume flow rate of the separate additional air streams prior to entering the additional cooling ring.

4. A method according to Claim 1, further comprising periodically changing the volume flow rate as a function of the measured longitudinal thicknesses of the blown film in the direction of production such that compensation occurs for any thickness fluctuations otherwise periodically occurring in the direction of production of the blown film.

5. A method according to Claim 1, further comprising after an air stream continuously generated by a blower has been separated into volume-controllable additional air streams, periodically changing the individual volume flow rates of the separate additional air streams as a function of the measured longitudinal thicknesses of the blown film in the direction of production such that compensation occurs for any thickness fluctuations otherwise occurring in the direction of production of the blown film.

6. A device for controlling thickness of film in a blown film extruder comprising:

a blow head;

a main cooling ring;

an additional cooling ring, said additional cooling ring supplying separate additional air streams;

a measuring and controlling device for controlling the thickness profile of a blown film, said measuring and controlling device scanning the thickness of the blown film above a freezing zone and controlling the additional air streams as a function of the measured blown film thicknesses;

said additional cooling ring being a segment disc arranged at the blow head of the blown film extruder underneath and in the direction of production before the main cooling ring.

7. A device according to Claim 6, wherein the additional cooling ring is mounted directly at the exit of the film tube material where the latter emerges from an annular nozzle of the blow head.

8. A device according to Claim 6, wherein the additional cooling ring is attached as an independent element to the main cooling ring.

9. A device according to Claim 6, wherein the additional cooling ring is connected to a blower for the separate additional air streams.

10. A device according to Claim 9, wherein a piece of equipment including flaps and/or valves is arranged outside the main cooling ring and said piece of equipment divides the air stream generated by the blower into individual separate additional air streams.

11. A method of controlling the thickness profile in the production of blown film by a blown film extruder having a blow head, a main cooling ring for supplying a main cooling gas stream, and an additional cooling ring arranged outside the main cooling ring, comprising:

supplying separate additional cooling gas streams from said additional cooling ring;

measuring the film thickness of the blown film with a measuring and controlling device above a freezing zone across the circumference of a film tube;

controlling the additional cooling gas streams as a function of the measured film thicknesses;

supplying the additional cooling gas streams for the film tube at least from the outside of the film tube in the direction of production in front of the main cooling gas stream; and

individually controlling the additional cooling gas streams with respect to its volume flow rate as a function of the film thicknesses across the circumference.

12. A method according to Claim 11, further comprising prior to entering the additional cooling ring, individually controlling the separate additional cooling gas streams with respect to its volume flow rate.

13. A method according to Claim 11, further comprising jointly and anticipatingly periodically changing the additional cooling gas streams as a function of a periodic film thickness fluctuation in the direction of production, such compensation occurs for otherwise occurring thickness fluctuations.

14. A method according to Claim 11, further comprising intermittently measuring the film thicknesses in the circumferential direction in terms of time continuously across the entire circumference of the film tube.

15. A method according to Claim 14, further comprising continuously measuring in one circumferential position the film thicknesses in the direction of production at least between the individual measurements of the film thickness across the circumference.

16. A method according to Claim 11, further comprising supplying the main cooling gas stream coming from the main cooling ring in at least two air blow-out planes.

17. A method according to Claim 11, further comprising said additional cooling gas streams amounts to at most 5% of the total cooling gas streams.

18. A method according to Claim 11, further comprising said additional cooling gas streams being formed entirely by inert gas or air with an inert gas admixture.

19. A method according to Claim 11, further comprising blowing the individually controlled additional cooling gas streams on the outside, against the film tube.

20. A method according to Claim 13, further comprising blowing the individually controlled additional cooling gas streams on the inside against the film tube.

21. The method according to Claim 20, further comprising said additional cooling gas streams in corresponding circumferential positions on the outside and on the inside are jointly supplied with pressure and jointly controlled.

22. A device for controlling the thickness profile in the production of blown film, comprising a blown film extruder with a blow head;

a main cooling ring for supplying a main cooling gas stream;

an additional cooling ring arranged outside the main cooling ring, said additional cooling ring supplying separate additional cooling gas streams;

a measuring and controlling device for controlling the thickness profile of the blown film, said measuring and controlling device measuring the film thickness at a film tube above a freezing zone across the circumference, and controlling the additional cooling gas streams as a function of the measured film thicknesses, the additional cooling ring arranged adjacent the blow head of the blown film extruder underneath the main cooling ring;

at least one blower arranged outside the additional cooling ring and a number of volume flow rate control elements and supply lines corresponding to the number of additional cooling gas streams coupled between said at least one blower and said additional cooling ring.

23. A device according to Claim 22, wherein the additional cooling ring comprises a one-piece segment disc with a substantially planar end face provided with cooling gas supply bores, said cooling gas supply bores are distributed around the outer circumference, radial grooves open at one end start from said bores and substantially extend as far as the inner circumference, said end face comprising the radial grooves sealingly resting against a substantially planar counter face of a cover part.

24. A device according to Claim 23, wherein the cover part with the planar counter face is formed directly by the main cooling ring against which the segment disc is bolted.

25. A device according to Claim 22, wherein the main cooling ring comprises annular nozzles which are arranged in two different planes, said nozzles fixed in section or which can be adjusted to a fixed section.

26. A device according to Claim 22, wherein a second additional cooling ring is arranged for supplying separate additional cooling gas streams inside the film tube and that outside said second additional cooling ring at least one blower is provided and a number of volume flow rate control elements and supply lines which corresponds to the number of said additional cooling gas streams are coupled between said blower and said second additional ring.

27. A device according to Claim 26, wherein supply lines leading to the additional cooling ring on the outside and supply lines leading to the second additional cooling ring on the inside of the film tube for additional cooling streams in corresponding circumferential positions form branch lines of lines containing a joint volume flow rate control element for said branch lines.

28. A device according to Claim 26, wherein the second additional cooling ring is arranged inside the film tube at the blow head of the blown film extruder in the plane of the additional cooling ring on the outside underneath the main cooling ring.

29. A device according to Claim 26, wherein the additional cooling ring on the inside comprises a one-piece segment disc with a substantially planar end face, air supply bores distributed on the inner circumference, radial grooves being open at one end and substantially extending as far as the outer circumference, said end face with the radial grooves sealingly resting against a substantially planar counter face of a cover part.

30. A device according to Claim 29, wherein the cover part with the planar counter face is formed by an inner cooling device with at least one annular nozzle which is arranged inside the film tube.